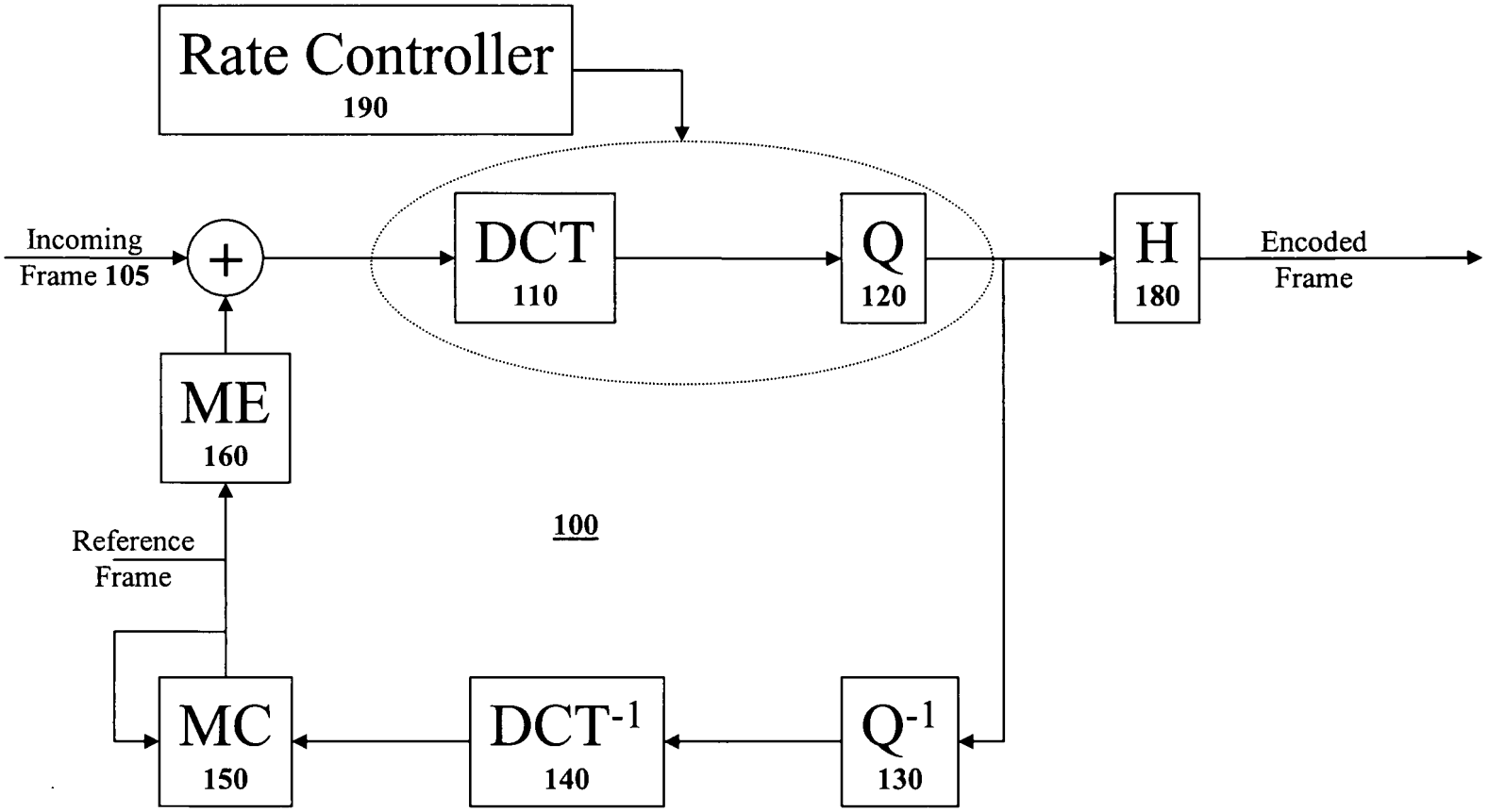
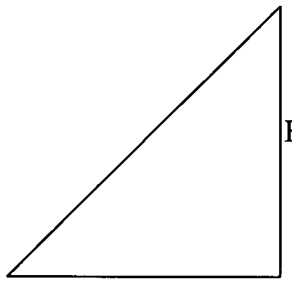

Rate Controller
190
Incoming
Frame 105
DCT
110
Q
120
H
180
Encoded
Frame
ME
160
Reference
Frame
100
MC
150
DCT-1
140
Q-1
130

Figure 1

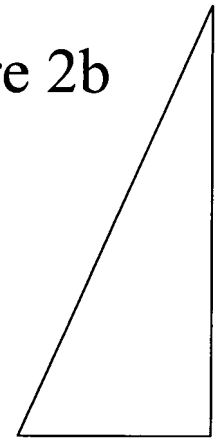
Figure 2a



Frame transmission duration
(proportional to frame size)

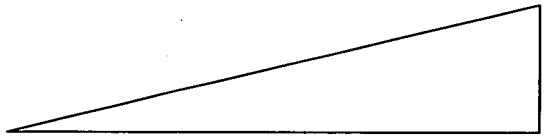
Frame display duration

Figure 2b



Large
Frame size,
Longer
transmission
duration

Frame display duration



Small Frame size,
Short transmission
duration

Frame display duration

Figure 2c

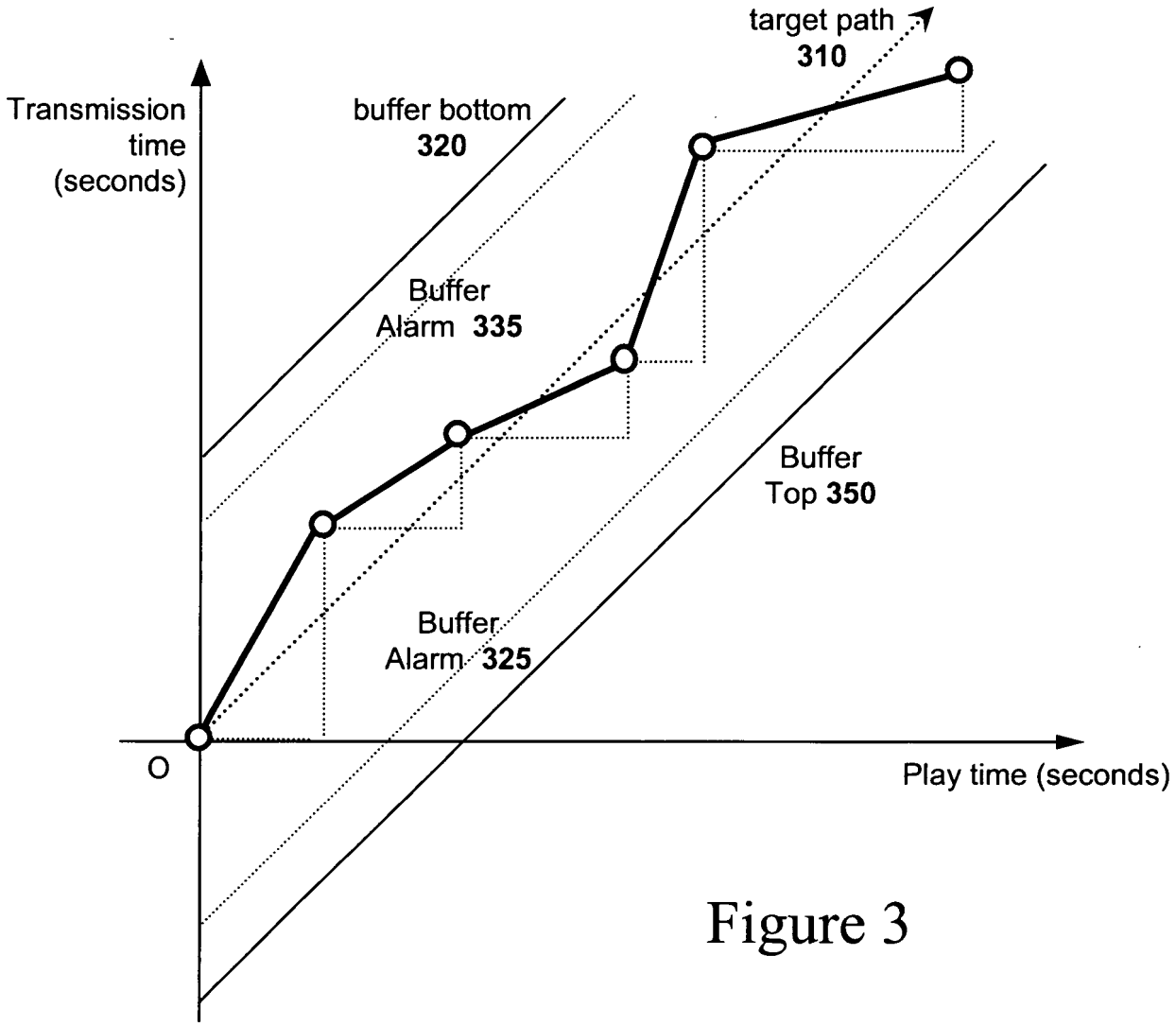

target path
310
Transmission
time
(seconds)
buffer bottom
320
Buffer
Alarm 335
Buffer
Top 350
Buffer
Alarm 325
O
Play time (seconds)

Figure 3

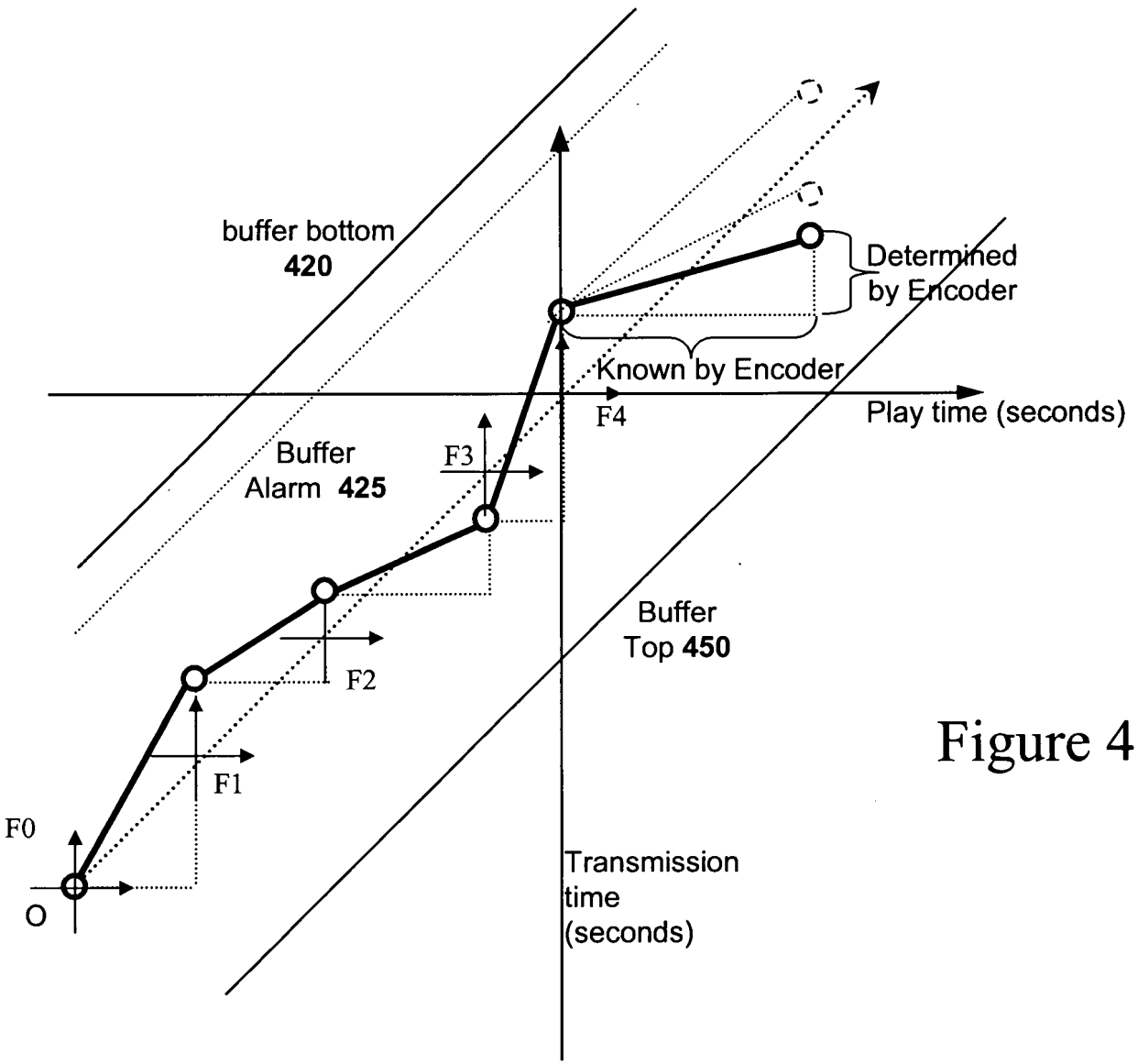

buffer bottom
420
Determined
by Encoder
Known by Encoder
Play time (seconds)
F4
Buffer
Alarm 425
F3
Buffer
Top 450
F2
F1
F0
O
Transmission
time
(seconds)

Figure 4

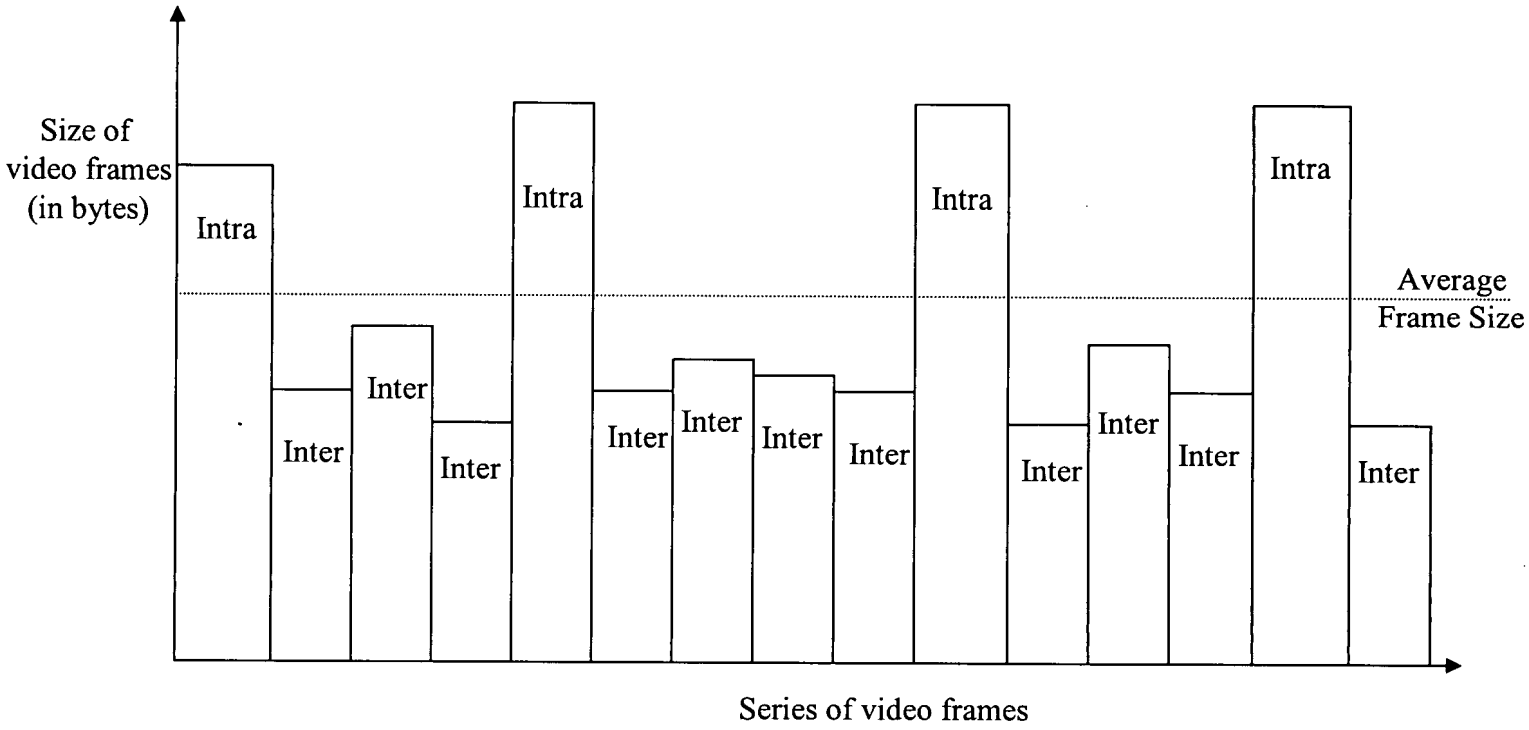

Size of
video frames
(in bytes)
Intra
Inter
Inter
Inter
Intra
Inter
Inter
Inter
Inter
Intra
Inter
Inter
Inter
Intra
Inter
Average
Frame Size
Series of video frames

Figure 5a

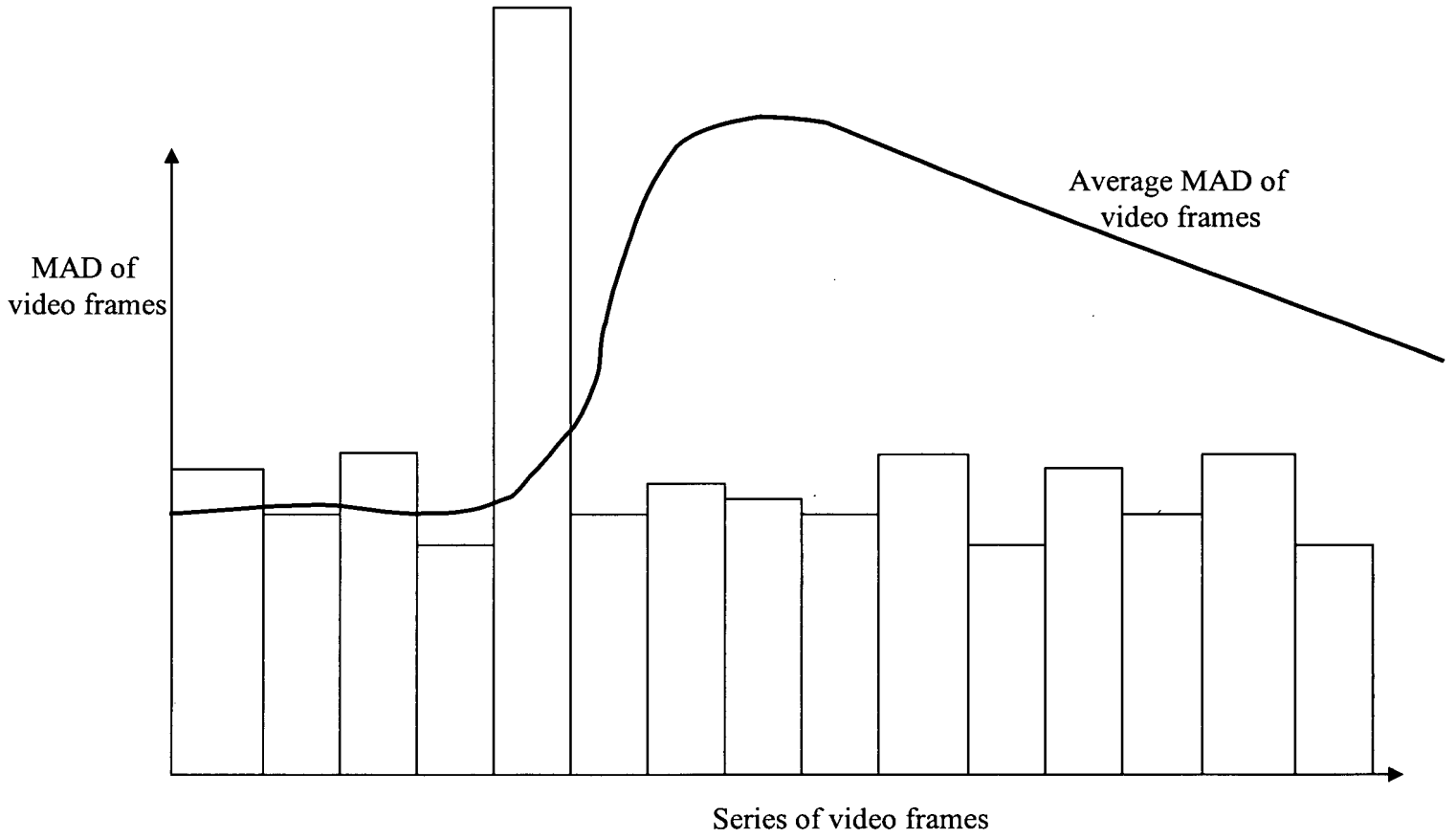

MAD of
video frames
Average MAD of
video frames
Series of video frames

Figure 5b

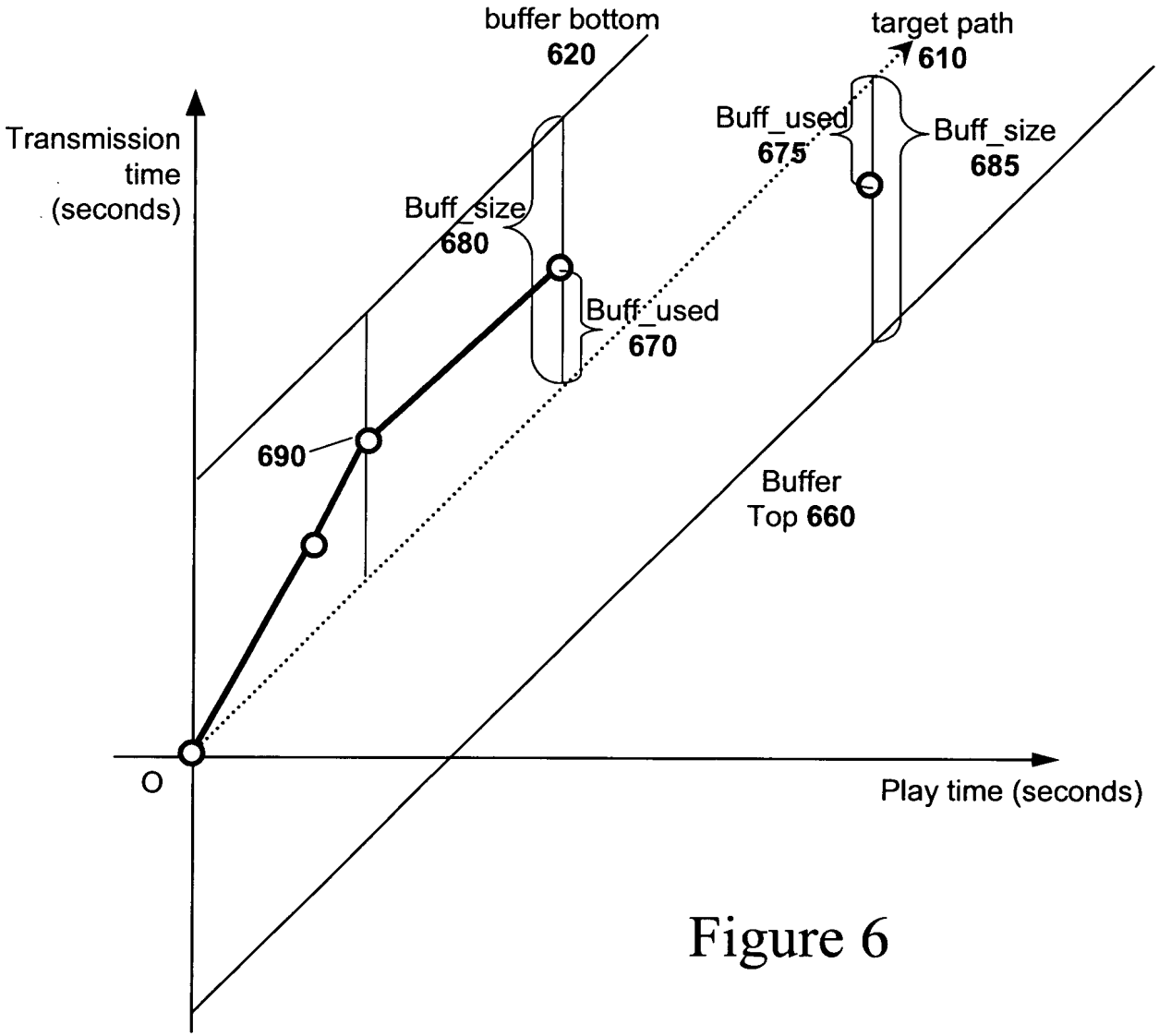

buffer bottom
620
target path
610
Transmission
time
(seconds)
Buff_used
675
Buff_size
685
Buff_size
680
Buff_used
670
690
Buffer
Top 660
O
Play time (seconds)

Figure 6

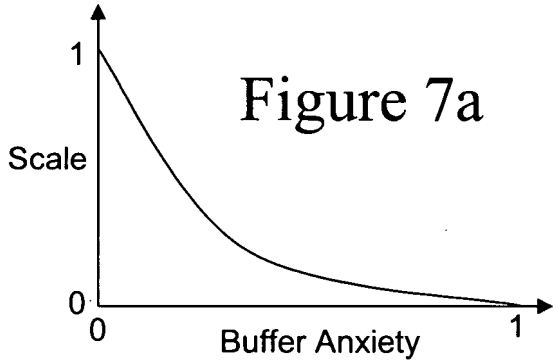


Figure 7a

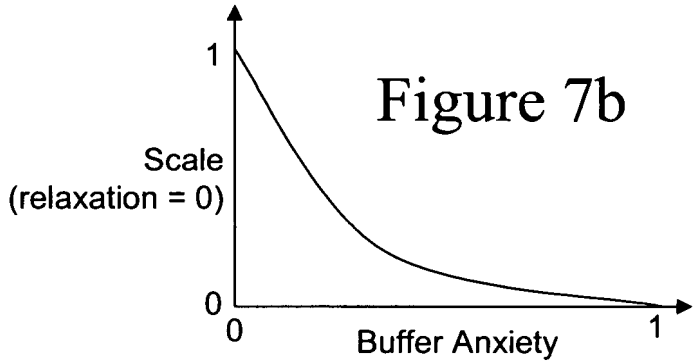


Figure 7b

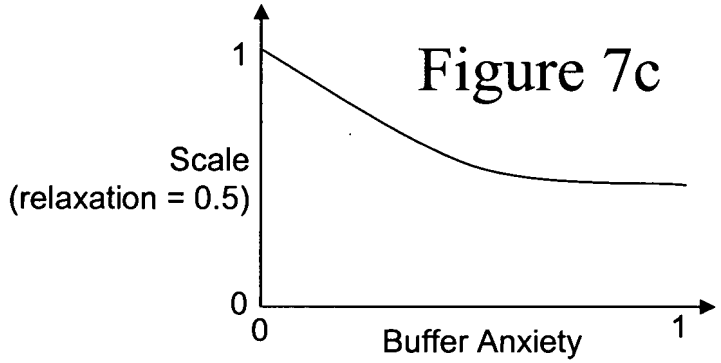


Figure 7c

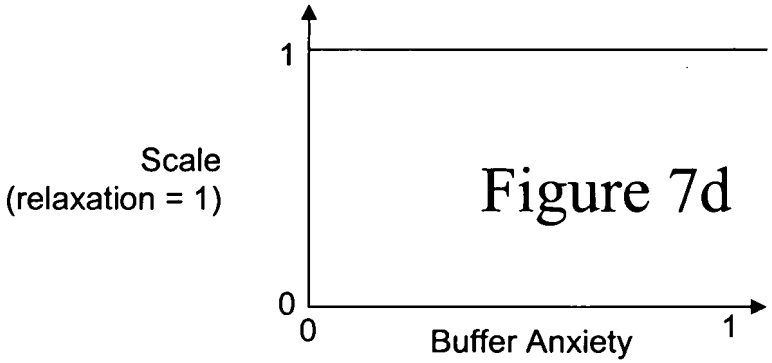


Figure 7d